



Spectrometers

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UV-Vis-NIR Spectrometers



NIR-MIR Spectrometers



High Resolution Spectrometers



Lowcost / OEM Spectrometers



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UV-Vis-NIR Spectrometers

NIR-MIR Spectrometers

High Resolution Spectrometers

low-cost/OEM Spectrometers

Ethernet interface Spectrometers

Monochromators

DK480 1/2m Monochromator

DK240 1/4m Monochromator

CM: 1/8m Monochromators

DK & CM Options

Light Sources

Tungsten-Halogen Light Sources

Deuterium Light Source

Xenon Light Source

IR Emitter

Hybrid Light Sources

Calibration Light sources

Wavelength Tunable Light Source

Ethernet interface Spectrometers



Filter Wheels

AB series Automated Filter Wheels

AB series Order Sorting Filters

AB202 Double Filter Box

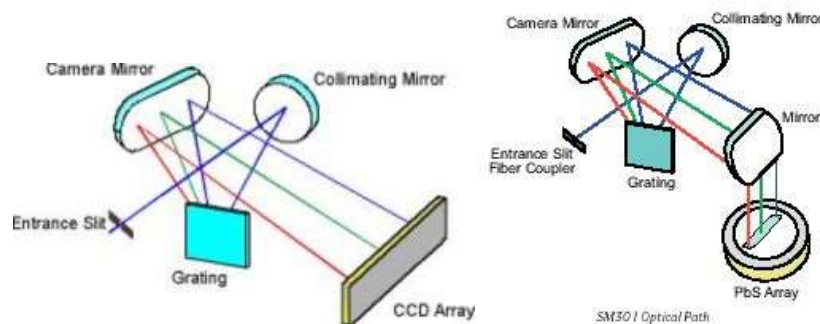
Accessories

Integrating Spheres

Fibers & Adapters

Technology

In recent years the combination of array detector and spectrograph has become the system of choice for spectroscopy. Spectral Products' SM line of computer-based miniature optical spectrometers offers state-of-the-art performance yet has compact form factors. Their versatile design and ease of use make them the first choice for scientific and industrial applications. SM series optical benches are designed to provide stable operation over a wide range of ambient temperatures. SM product lines together with their accessories (light sources, filters, optical fibers, and sampling accessories) are now used throughout the world in such systems as Raman spectroscopy, emission, and excitation fluorescence/luminescence spectroscopy, arc/spark/plasma spectroscopy, spectrophotometry, spectroradiometry, laser breakdown spectroscopy, picosecond laser analysis, radiometry, infrared measurements, color/LED measurement, process control/diagnostic/calibration and so on. Spectral Products provides a wide selection of UV/VIS/NIR (regular and back-thinned/TE-cooled CCD) and NIR/MIR (InGaAs, PbS, and PbSe) detectors, and some useful sampling accessories for their application. SP's SM miniature spectrometers are packed with great features and performance in a small footprint. The SM series spectrometers are based on a crossed Czerny-Turner configuration.



Operation

Connections between the spectrometer and the computer interface are made via a shielded electrical cable. Detector arrays are also included in the same housing in handheld versions. SM spectrometers can be interfaced with computers via USB, and ethernet. Especially, our USB and ethernet interfaces give our SM series spectrometers some of the most effective high data acquisition speeds available.

Considerations

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|--------------------|---|
| Detector | SM spectrometers employ 2048 pixels Si-CCD (Sony ILX511), 3648 pixels Si-CCD (Toshiba TCD1304), 1024 pixels back-thinned TE cooled CCD (Hamamatsu S7031-1006), 2048 pixels back-thinned CCD (Hamamatsu S10420-1106-10), 256/512 pixels multiplexed InGaAs (Hamamatsu G9204, G9206, and G9208 series), 256 pixels PbS/PbSe detector arrays (IR Materials) with high sensitivity. A sensing element height of 200nm to 1,050nm (CCD)/0.9µm to 1.7µm (InGaAs) or up to 2.5µm (extended InGaAs)/ 1.0µm to 3.0µm (PbS)/1.5µm to 5.0µm (PbSe) maximizes the detector light collection capability. For UV and near IR regions where regular silicon CCD detector response is inherently weak, we provide a variety of sensitivity enhancement coatings for detector arrays. Every IR range detector is thermoelectrically cooled and temperature stabilized to ensure long-term operational stability. |
| Optics | Our pioneering optics and coating technologies also allow us to take another step further to reduce energy lost between optical surfaces. |
| Filters | By use of SP's unique linear variable long pass filters in SM spectrometers, a wide, simultaneous wavelength coverage is achieved, free of higher-order interference. |
| Gratings and Slits | We offer various ruled and holographic gratings depending on the wavelength range. Also, several slits are available for various resolutions and throughput. |
| Applications | SM spectrometers can be applied to various fields such as: <ul style="list-style-type: none"> - Semiconductor industry process diagnostics - Light source/Sample spectrum analysis - Color/Fluorescence measurement - Biology/Chemistry/Biochemistry/Medical applications - Food and Agriculture/Pollution measurement - Chemicals/Plastics/Polymers analysis - Petrochemicals/Pharmaceutical analysis |



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